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Europäisches Patent Nr. **European Patent No.** **Brevet européen n°**

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Patentinhaber **Proprietor of the Patent** **Titulaire du brevet**

KCI Licensing, Inc.
P.O. Box 659508
San Antonio, Texas 78265-9508/US

München, den
Munich,
Fait à Munich, le 18.08.04

Alain Pompidou

Präsident des Europäischen Patentamts
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(54) SUCTION HEAD FOR WOUND TREATMENT AND COMBINATION WITH A SURGICAL DRAPE

SAUGKOPF ZUR WUNDBEHANDLUNG UND KOMBINATION MIT EINEM CHIRURGISCHEN ABDECKTUCH

BEC D'ASPIRATION POUR LE TRAITEMENT DES PLAIES ET COMBINAISON AVEC UN CHAMP STERILE

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(73) Proprietor: **KCI Licensing, Inc.**
San Antonio, Texas 78265-9508 (US)

(72) Inventors:
- **HEATON, Keith, Patrick**
  Poole, Dorset BH14 0QG (GB)
- **HUNT, Kenneth, William**
  Wimborne, Dorset BH21 1TY (GB)

(74) Representative: **Woodcraft, David Charles et al**
Brookes Batchellor
102-108 Clerkenwell Road
London EC1M 5SA (GB)

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WO-A1-97/18007
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therefore, there is provided a suction head for applying suction to a wound area which comprises a generally planar flange portion and a tubular connector piece on a first face, for connecting a suction tube to an aperture through the flange portion to the other face, said other face having projections defining flow channels facilitating flow of fluid towards said aperture.

[0014] Preferably, the suction head described above is combined with a surgical drape, the drape comprising a thin, flexible, adhesive-coated plastics film, and the tubular connector piece extends through an opening in the plastics film with the adhesive coating adhered to said first face of the flange portion.

[0015] Preferably, the suction head is used in conjunction with an open-celled foam pad so that one surface of the foam pad is placed in contact with a wound area and the suction head applied to the other surface of the foam pad. In the case of deep wounds the foam may be shaped and placed so that it is packed into the wound cavity as described in our above cited PCT applications. According to another technique, which is particularly applicable to superficial wounds, the foam pad may be a relatively thin pad which is placed over the wound. The suction head is placed in contact with the open face of the foam pad and the drape applied over the suction head to fix the assembly to the patent's skin.

[0016] Various types of open celled foams can be used as described in our above cited PCT applications. The foam may be a polyurethane foam but polyvinyl acetate (pva) foams are preferred, especially when used as a pad which is placed over the wound. These are to some extent hydrophilic, which seems to exhibit beneficial comfort properties when applied to the skin. Wound healing is stimulated by maintenance of moist conditions in the wound area, and this is facilitated by using a hydrophilic foam.

[0017] Further features and advantages of the present invention will be apparent from the following description and accompanying drawings, of non-limiting examples in accordance with the invention.

[0018] Referring to the accompanying drawings:-

Figure 1 represents a conventional design of surgical drape;

Figure 2 represents a variation in the design of the handling bars at one end of the drape shown in Figure 1;

Figure 3 is a view similar to Figure 1 of a surgical drape in accordance with the invention;

Figure 4 is a plan view of the surgical drape shown in Figure 3;

Figure 5 is a plan view from beneath of a suction head in accordance with the invention; and

Figure 6 is a side elevation of the suction head shown in Figure 5;

Figure 7 is a view similar to Figure 6 but shows the suction head secured to a skin surface with the drape and with a foam pad located between the head and the skin surface.

Figure 8 is a perspective view of the drape with a central strip portion of the protective sheet in the course of being removed, and

Figures 9(a)~9(c) illustrate the steps of affixing the dressing assembly to a wound area on a patient's leg and attachment to a negative pressure assembly.

[0019] Referring to Figures 1 and 2 of the accompanying drawings, a conventional laminate for use as a surgical drape comprises a thin, flexible, transparent plastics film 1 which is adhesive-coated on one face 2, normally with a high-tack pressure-sensitive adhesive, and is protected with a releasable layer 3. The thin plastics film is conveniently of polyurethane because it transmits moisture. Layer 3 is normally considerably thicker than film 1 and is coated on the surface adjacent to the adhesive with a releasable material such as a silicone to facilitate stripping away from the adhesive-coated film.

[0020] In order to facilitate removal of the adhesive-coated film prior to use of the device, handling bars 4 are bonded at each end to the adhesive-coated film 1. Thus, by holding one of the bars 4, the protective layer 3 can be stripped off and the adhesive face applied to the skin of the patient. To facilitate handling of the thin, flexible film 1, a strengthening plastics film 5 is frequently applied to the free face of the plastics film 1. This is generally also transparent or translucent. Film 5 is preferably not bonded with adhesive to film 1, but may remain in contact by reason of electrostatic forces or because of close contact between the two conforming surfaces of film 1 and film 5.

[0021] Usually, the surgeon or nurse will wish to strip off the protective layer 5 after the film 1 has been correctly placed on the patient's skin, and this can be facilitated by making partial cuts 6 through the films 1 and 5, so that as the handling bar 4 is drawn upwards from the patient's skin, the adhesive film 1 remains adhered to the patient, while the partial cuts 6 causes separation of the flexible film from the strengthening film 5. Strengthening bars 7 may be provided to hold the lateral edges of the strengthening film 5 and film 1 together with their main parts.

[0022] An alternative arrangement is shown in Figure 2, in which the strengthening film 5 is provided with a separate overlapping handling bar 14, to facilitate its removal from the flexible film 1.

[0023] Further details of the make-up and manufacture of surgical drapes are given in US Patent No. 5,437,622 and European Patent Application No. 0161865 and the prior art referred to therein.

[0024] Referring to Figure 3 and 4, the surgical drape of this invention comprises a protective outer film 20, laminated to a thin, flexible film 21. The flexible film 21 includes an adhesive-coated layer which is protected with a release-coated sheet material 24. Lateral edges

2. A suction head as claimed in claim 1 which is combined with a surgical drape, the drape comprising a thin, flexible adhesive-coated plastics film (21), the tubular connector piece (35) extending through an opening in the plastics film (21) with the adhesive coating adhered to said first face of the flange portion (30).

3. A suction head and surgical drape combination as claimed in claim 2 in which the adhesive-coated film (21) is strengthened with a second plastics film (20) which is thicker or less flexible than said adhesive coated film.

4. A suction head and surgical drape combination as claimed in claim 2 or 3 wherein the adhesive coating on said flexible film is protected with a protective, releasable layer (24) covering the area of the adhesive, said releasable layer comprising a separate strip protecting the adhesive coating in the vicinity of the suction head and said strip carrying a flap (27) overlapping an adjacent portion of the releasable layer and constituting a handle to facilitate removal of said strip prior to use.

5. An assembly for use with a source of suction for stimulating healing of wounds which comprises a foam pad comprising an open-celled flexible polymer foam and a suction head and drape as claimed in claim 4.

6. A suction head according to claim 1 in combination with a surgical drape which comprises a thin, flexible, adhesive-coated plastics film (21) and a strengthening layer (20) applied to the face opposite to the adhesive coating, the strengthening layer being a plastics film which is thicker or less flexible than said adhesive-coated film, and a protective, releasable layer (24) applied to the adhesive coating, the drape having an aperture (25) through at least the strengthening film and adhesive-coated film to permit, in use, access to a wound area, at least one first edge of the drape having a non-adhesive coated handling bar (23) for separating the adhesive-coated film from the protective layer, and wherein the protective layer comprises a separate strip extending parallel to the first edge of the drape, and which protects the adhesive coating in the region of the aperture (25) and carries at least one flap (27) overlapping the adjacent portion of the protective layer, said flap constituting a handle for facilitating removal of said strip prior to use.

Patentansprüche

1. Saugkopf zum Anwenden von Unterdruck an einen Wundenbereich, der umfasst:

einen im Wesentlichen planaren Flanschabschnitt (30) und ein röhrenförmiges Verbindungsstück (35) auf einer ersten Fläche zur Verbindung eines Saugrohrs (106) mit einer Öffnung (25) durch den Flanschabschnitt (30) zu der anderen Fläche;

dadurch gekennzeichnet, dass die andere Fläche Überstände (32) aufweist, welche Durchflusskanäle (33) definieren, die Durchfluss von Fluiden zu der Öffnung erleichtern.

2. Saugkopf nach Anspruch 1, der mit einer medizinischen Abdeckung kombiniert ist, wobei die Abdekkung eine dünne, flexible, mit Haftmittel beschichtete Kunststofffolie (21) umfasst, und sich das röhrenförmige Verbindungsstück (35) durch eine Öffnung in der Kunststofffolie (21) erstreckt, wobei die Haftmittel-Beschichtung an der ersten Fläche des Flanschabschnitts (30) anhaftet.

3. Kombination eines Saugkopfs mit einer medizinischen Abdeckung nach Anspruch 2, bei der die mit Haftmittel beschichtete Folie (21) durch eine zweite Kunststofffolie (20) verstärkt wird, die dicker oder weniger flexibel als die mit Haftmittel beschichtete Folie ist.

4. Kombination eines Saugkopfs mit einer medizinischen Abdeckung nach Anspruch 2 oder 3, wobei die Haftmittel-Beschichtung auf der flexiblen Folie von einer schützenden, ablösbaren Schicht (24) geschützt ist, die den Bereich des Haftmittels abdeckt, und wobei die ablösbare Schicht einen separaten Streifen umfasst, der die Haftmittel-Beschichtung in der Nähe des Saugkopfs schützt und der eine Lasche (27) trägt, die einen angrenzenden Abschnitt der ablösbaren Schicht überlappt und einen Griff bildet, um die Entfernung des Streifens vor Gebrauch zu erleichtern.

5. Anordnung zum Gebrauch mit einer Quelle für Unterdruck zum Anregen von Wundheilung, die umfasst: ein Schaumstoffpolster, das einen offenzelligen flexiblen Polymer-Schaumstoff umfasst, und einen Saugkopf sowie eine Abdeckung nach Anspruch 4.

6. Saugkopf nach Anspruch 1 in Kombination mit einer medizinischen Abdeckung, die umfasst:

eine dünne, flexible, mit einem Haftmittel beschichtete Kunststofffolie (21),
und eine Verstärkungsschicht (20), die an der der Haftmittel-Beschichtung gegenüberliegenden Fläche angebracht ist, wobei die Verstärkungsschicht eine Kunstofffolie ist, die dicker oder weniger flexibel als die mit Haftmittel be-

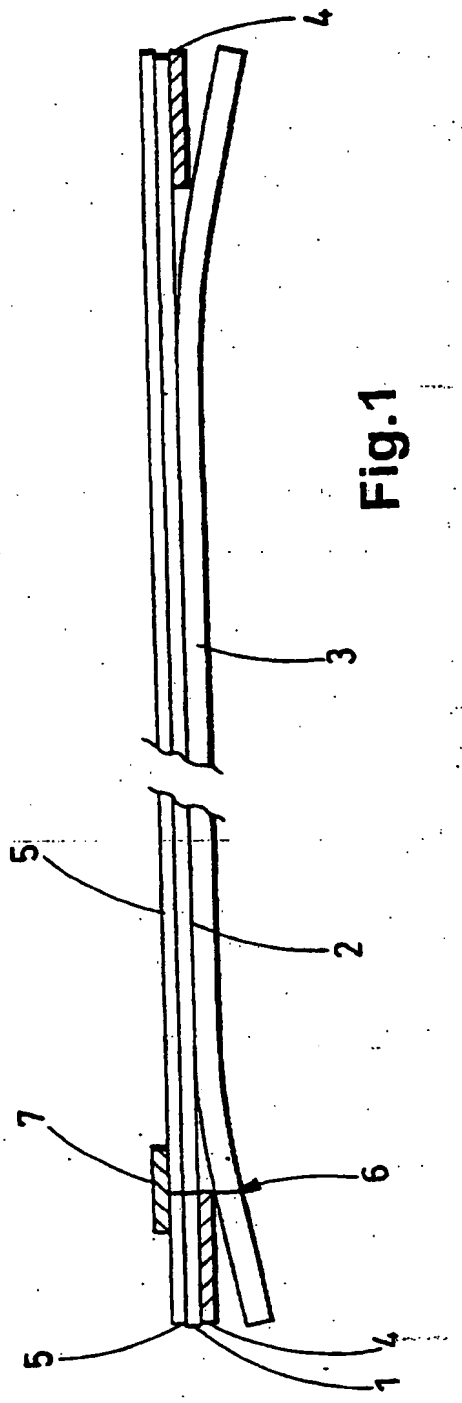

Fig.1

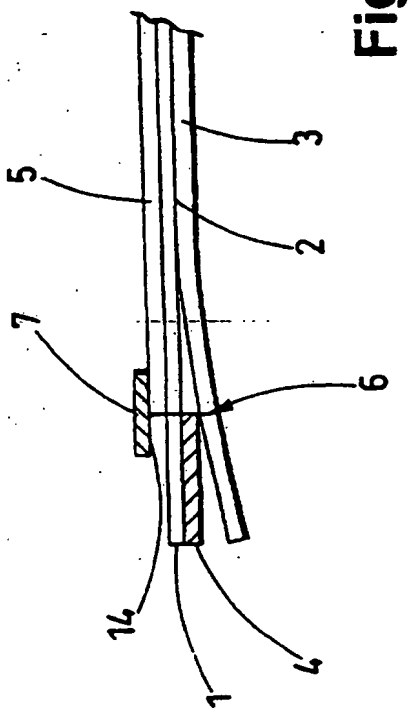

Fig. 2

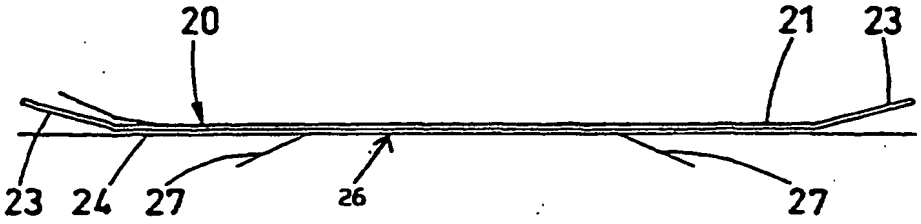

Fig. 3

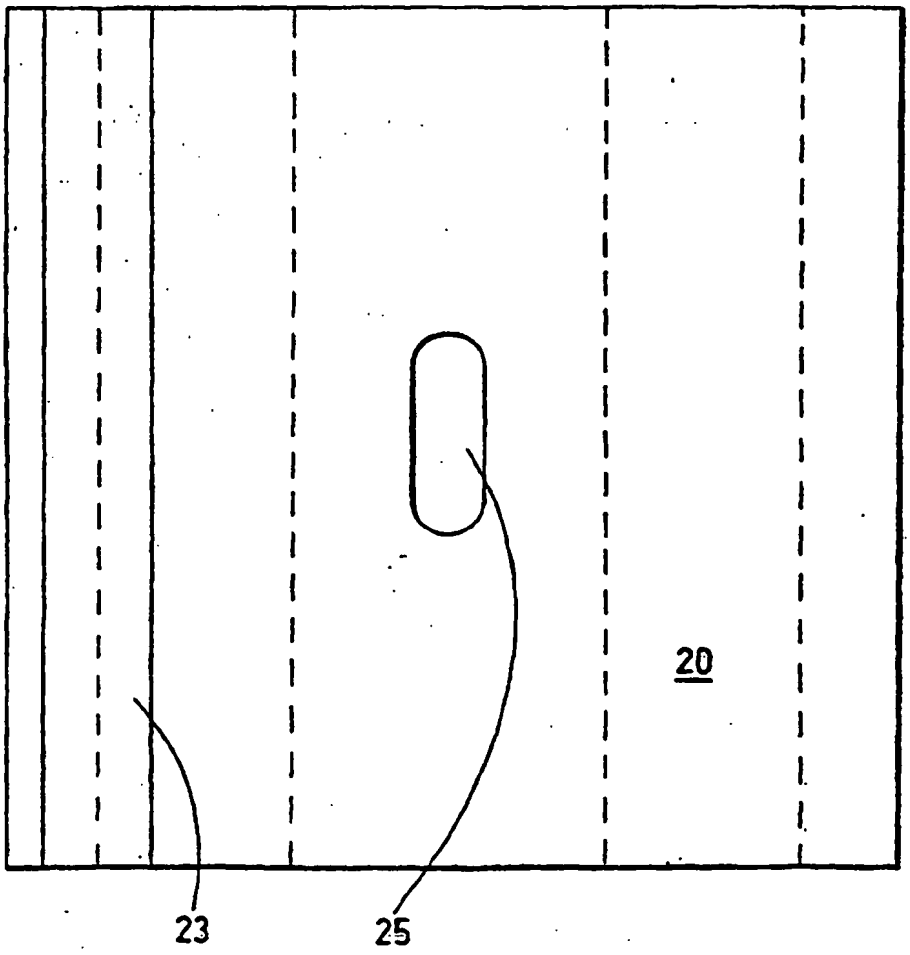

Fig. 4

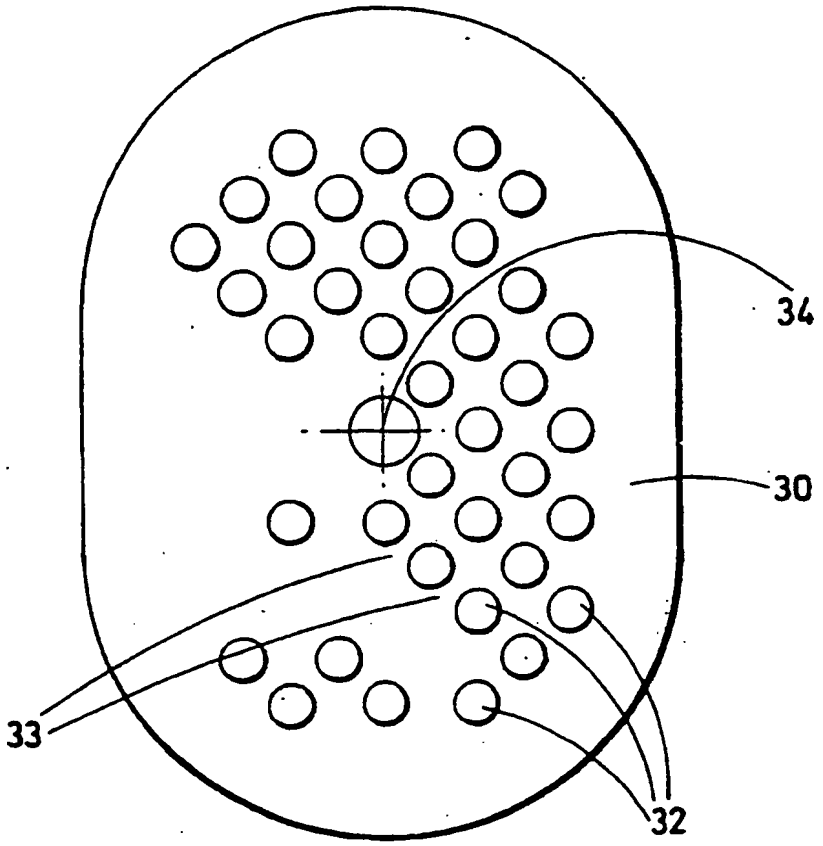

Fig. 5

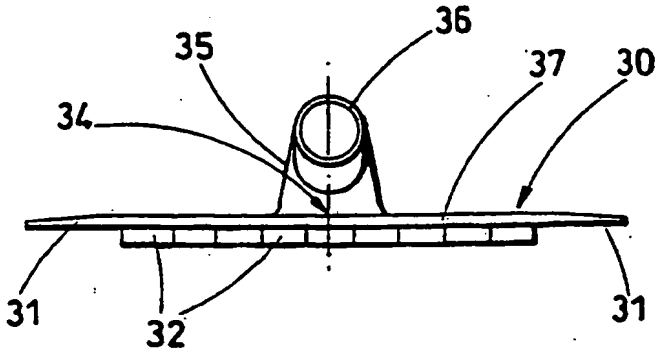

Fig. 6

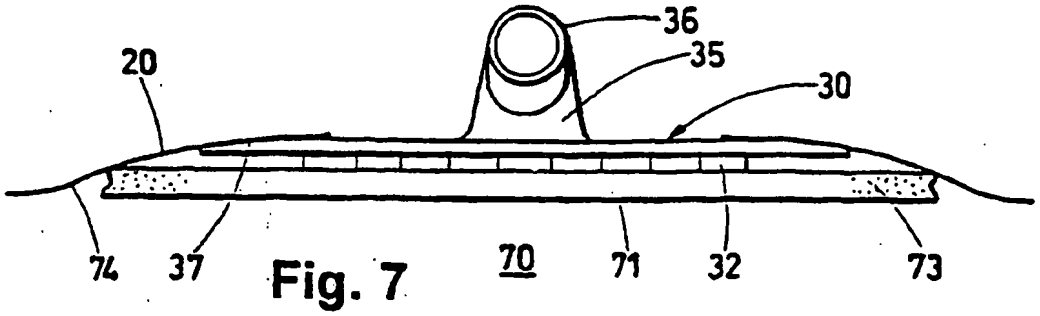

Fig. 7

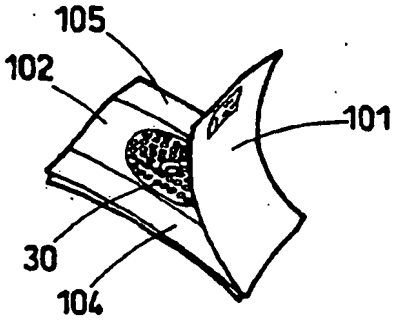

Fig. 8

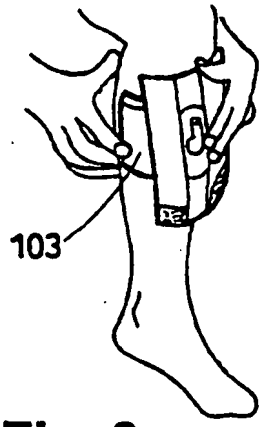

Fig. 9a

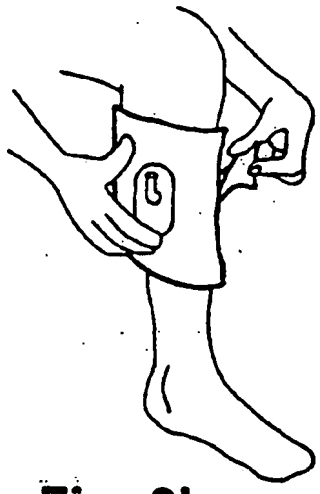

Fig. 9b

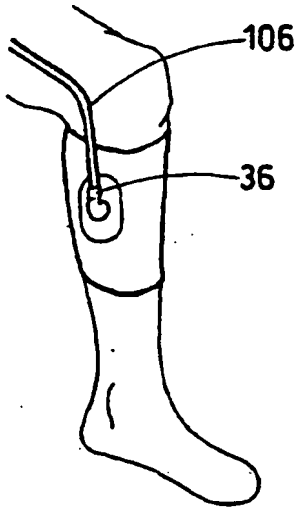

Fig. 9c

BALANCE DEVICE

Patent number: JP4129536
Publication date: 1992-04-30
Inventor: KEINO HIROYOSHI
Applicant: TERUMO CORP
Classification:
- international: A61B5/14; A61M1/02; G01G17/04
- european:
Application number: JP19900247288 19900919
Priority number(s): JP19900247288 19900919

Abstract of **JP4129536**

PURPOSE:To obtain a balance device with which the balance precision is improved, by correcting the detection error of a weight detecting means which is caused by the tilt of a container supporting part, according to the tilt of the container supporting part, and installing a control means for obtaining the weight in a container on the container supporting part. CONSTITUTION:As for a blood taking device 10, a bag receiving plate 19 is supported on a balance 33 which is cantilever-supported through a balance installation member 31, and the CPU 65 of a main control circuit 61 detects the weight of a blood bag 1 on the bag receiving plate 19 in the vertical direction for the hag receiving plate, from the output V2 of a weight detecting sensor 34 consisting of a strain guage on the basis of the torsional deformation of the balance 33. Further, the CPU 65 of the main control circuit 61 calculates the tilt angle theta which the bag receiving plate 19 forms for the vertical direction in the case when a weight detection sensor 34 detects weight, from the output V1 of a tilt detection sensor 100 installed on the bag receiving plate 19 or a swing frame 22. The CPU 65 of the main control circuit 61 detects the correct weight of the blood bag 1 by correcting the output V2 of the weight detection sensor 34 by using the tilt angle theta, and the blood taking-in quantity is measured.